What is claimed:

1. A multi-function switch, comprising:

a first rotary switch module having a first surface;

at least one substantially incompressible first detent formed on said first surface;

a rotary switch support member having a second surface; and

at least one substantially incompressible second detent formed on said second surface;

wherein said at least one first detent engages said at least one second detent; and

wherein dimensions of said at least one first detent and said at least one second detent are such that said at least one first detent may be forced to override said at least one second detent when a first sufficient torquing force is applied to said first rotary switch module.

2. The multi-function switch of claim 1,

wherein said at least one first detent comprises a single male detent; and

wherein said at least one second detent comprises a plurality of female detents.

3. The multi-function switch of claim 2, further comprising: a second rotary switch module having a third surface; at least one substantially incompressible third detent formed on said third surface; and at least one substantially incompressible fourth detent formed on said second surface, wherein said at least one fourth detent does not overlap said at least one second detent; wherein said at least one third detent engages said at least one fourth detent; and wherein dimensions of said at least one third detent and said at least one fourth detent are such that said at least one third detent may be forced to override said at least one fourth detent when a second sufficient torquing force is applied to said second rotary switch module.

4. The multi-function switch of claim 3, wherein said at least one third detent comprises a single male detent; and

wherein said at least one fourth detent comprises a plurality of female detents.

5. The multi-function switch of claim 4, further comprising:

• first conductive bridge contact coupled to said first surface; and

• flexible circuit board in contact with and substantially conforming to at least a portion of said second surface, said flexible circuit board having a plurality of exposed conductive contacts;

wherein said first conductive bridge contact is operable to conductively couple at least two of said contacts when said first rotary switch module is at a first position with respect to said rotary switch support member.

6. The multi-function switch of claim 5, wherein said flexible circuit board comprises:

flexible non-conductive material;

* first layer of flexible, non-conductive material;

* second layer of flexible, non-conductive material;

at least one conductive trace coupled to said contacts, said at least one conductive trace lying between said first and second layer;

at least one opening formed in said first layer such that said plurality of contacts [are] is exposed.

7. The multi-function switch of claim 6, further comprising:

a second conductive bridge contact coupled to said third surface;

wherein said second conductive bridge contact is operable to conductively couple at least two of said contacts when said second rotary switch module is at a second position with respect to said rotary switch support member.

8. The multi-function switch of claim 7, further comprising;

a handle stalk having a proximal end and a distal end, said proximal end being operatively coupled to said rotary switch support member;

a plunger coupled to said stalk distal end such that said plunger may move linearly with respect to said stalk distal end, said plunger being biased in said distal direction;

a rotational receptacle coupled to said handle stalk such that said handle stalk may pivot in at least one plane: and

a concave centering mechanism having a concave surface and coupled to said rotational receptacle such that said plunger is in contact with said concave surface;

wherein a pivoting force applied to the handle stalk causes said plunger to be displaced along said concave surface, thereby compressing said plunger away from said distal end; and

wherein removal of said pivoting force allows distal linear movement of said plunger in response to said plunger bias, thereby forcing said plunger to a center of said concave surface.

9. The multi-function switch of claim 8, further comprising:

a spring coupled between said handle stalk and said plunger, wherein said spring supplies said biasing force.

10. The multi-function switch of claim 9, further comprising: a rotation assembly coupled to said handle stalk by means of a first pivot pin therethrough; and a second pivot pin coupling said rotation assembly to said rotational receptacle; wherein said first pivot pin allows said handle stalk to rotate in a first plane with respect to said rotational receptacle; and wherein said second pivot pin allows said handle stalk to rotate in a second, orthogonal plane with respect to said rotational receptacle.

11. The multi-function switch of claim 10, further comprising: at least one magnet coupled to said handle stalk; and at least one magnetic field sensor; wherein at least one magnetic field sensor is positioned to sense movement of said at least one magnet when said handle stalk is rotated in at least one of said first and second planes.

12. The multi-function switch of claim 11, wherein said at least one magnetic field sensor comprises at least one Hall effect sensor.

13. The multi-function switch of claim 12, wherein said at least one magnet comprises a first magnet coupled to said handle stalk proximal of said first pivot pin and a second magnet coupled to said handle stalk distal to said first pivot pin; and wherein said at least one Hall effect sensor comprises a first and second Hall effect sensor for sensing rotation of said handle stalk about said first pivot pin, and a third and a fourth Hall effect sensor for sensing rotation of said handle stalk about said second pivot pin.

14. A multi-function switch, comprising:

first rotary switch module having a first surface;

first conductive bridge contact coupled to said first surface;

rotary switch support member having a second surface; and

flexible circuit board in contact with and substantially conforming to at least a portion of said second surface, said flexible circuit board having a plurality of exposed conductive contacts; wherein said first conductive bridge contact is operable to conductively couple at least two of said contacts when said first rotary switch module is at a first position with respect to said rotary switch support member.

15. The multi-function switch of claim 14, wherein said flexible circuit board comprises: a first layer of flexible, non-conductive material; a second layer of flexible, non-conductive material; at least one conductive trace coupled to said contacts, said at least one conductive trace lying between said first and second layer; at least one opening formed in said first layer such that said plurality of contacts [are] is exposed.

16. The multi-function switch of claim 14, further comprising: a second rotary switch module having a third surface; and a second conductive bridge contact coupled to said third surface; wherein said second conductive bridge contact is operable to conductively couple at least two of said contacts when said second rotary switch module is at a second position with respect to said rotary switch support member.

17. A switch stalk, comprising: a handle stalk having a proximal end and a distal end; a plunger coupled to said stalk distal end such that said plunger may move linearly with respect to said stalk distal end, said plunger being biased in said distal direction; a rotational receptacle coupled to said handle stalk such that said handle stalk may pivot in at least one plane; and a concave centering mechanism having a concave surface and coupled to said rotational receptacle such that said plunger is in contact with said concave surface; wherein a pivoting force applied to the handle stalk causes said plunger to be displaced along said concave surface, thereby compressing said plunger away from said distal end; and wherein removal of said pivoting force allows distal linear movement of said plunger in response to said plunger bias, thereby forcing said plunger to a center of said concave surface.

18. The switch stalk of claim 17, further comprising: a spring coupled between said handle stalk and said plunger, wherein said spring supplies said biasing force.

19. The switch stalk of claim 17, further comprising: a rotation assembly coupled to said handle stalk by means of a first pivot pin therethrough; and a second pivot pin coupling said rotation assembly to said rotational receptacle; wherein said first pivot pin allows said handle stalk to rotate in a first plane with respect to said rotational receptacle; and wherein said second pivot pin allows said handle stalk to rotate in a second, orthogonal plane with respect to said rotational receptacle.

20. A multi-function switch, comprising:

handle stalk having a proximal end and a distal end;

rotation assembly coupled to said handle stalk such that said handle stalk may be rotated with respect to said rotation assembly in at least one plane; at least one magnet coupled to said handle stalk; and at least one magnetic field sensor; wherein said at least one magnetic field sensor is positioned to sense movement of said at least one magnet when said handle stalk is rotated.

21. The multi-function switch of claim 20, further comprising:

first pivot pin coupling said handle stalk to said rotation assembly; and

rotational receptacle coupled to said rotation assembly by a second pivot pin; wherein said first pivot pin allows said handle stalk to rotate in a first plane with respect to said rotational receptacle; and wherein said second pivot pin allows said handle stalk to rotate in a second, preferably orthogonal plane with respect to said rotational receptacle.

22. The multi-function switch of claim 20, wherein said at least one magnetic field sensor comprises at least one Hall effect sensor.

23. The multi-function switch of claim 21, wherein said at least one magnet comprises a first magnet coupled to said handle stalk proximal of said first pivot pin and a second magnet coupled to said handle stalk distal to said first pivot pin; and

wherein said at least one magnetic field sensor comprises a first and a second magnetic field sensor for sensing rotation of said handle stalk about said first pivot pin, and a third and a fourth magnetic field sensor for sensing rotation of said handle stalk about said second pivot pin.

24. The multi-function switch of claim 23, wherein said first, second, third and fourth magnetic field sensors comprise Hall effect sensors.

25. A multi-function switch, comprising:

a first rotary switch module having a first surface;

a rotary switch support member having a second surface;

at least one first detent formed on one of said first and second surfaces;

a first detent washer shaped to engage said at least one first detent, and having an angular position fixed relative to one of the first rotary switch module and the rotary switch support member;

a first spring positioned to bias said first detent washer against said at least one first detent.

26. The multi-function stalk switch of claim 25, further comprising:

a second rotary switch module having a third surface;

wherein the rotary switch support member also has a fourth surface;

at least one second detent formed on one of said third and fourth surfaces;

a second detent washer shaped to engage said at least one second detent, and having an angular position fixed relative to one of the second rotary switch module and the rotary switch support member;

a second spring positioned to bias said second detent washer against said at least one second detent.

27. The multi-function stalk switch of claim 26, further comprising:

a flexible circuit board in contact with and substantially conforming to at least a portion of said second surface, said flexible circuit board having a first plurality of first magnetic field sensors;

a first magnet coupled to said first rotary switch module;

a second magnet coupled to said second rotary switch module;

wherein said first magnet is positioned to be detected by at least one of said plurality of magnetic field sensors when said first rotary switch module is at a first position with respect to said rotary switch support member; and

wherein said second magnet is positioned to be detected by at least one of said plurality of magnetic field sensors when said first rotary switch module is at a second position with respect to said rotary switch support member.

28. The multi-function stalk switch of claim 27, further comprising:

a handle stalk having a proximal end and a distal end, said proximal end being operatively coupled to said rotary switch support member;

a plunger coupled to said stalk distal end such that said plunger may move linearly with respect to said stalk distal end, said plunger being biased in said distal direction;

a rotational receptacle coupled to said handle stalk such that said handle stalk may pivot in at least one plane; and

a concave centering mechanism having a concave surface and coupled to said rotational receptacle such that said plunger is in contact with said concave surface;

wherein a pivoting force applied to the handle stalk causes said plunger to be displaced along said concave surface, thereby compressing said plunger away from said distal end; and

wherein removal of said pivoting force allows distal linear movement of said plunger in response to said plunger bias, thereby forcing said plunger to a center of said concave surface.

29. The multi-function stalk switch of claim 28, further comprising:

a rotation assembly coupled to said handle stalk by means of a first pivot pin extending therethrough; and

a second pivot pin coupling said rotation assembly to said rotational receptacle;

wherein said first pivot pin allows said handle stalk to rotate in a first plane with respect to said rotational receptacle; and

wherein said second pivot pin allows said handle stalk to rotate in a second plane with respect to said rotational receptacle.

30. The multi-function stalk switch of claim 29, wherein the second plane is substantially orthogonal to the first plane.

31. The multi-function stalk switch of claim 29, further comprising:

at least one third magnet coupled to said handle stalk; and

at least one second magnetic field sensor;

wherein at least one magnetic field sensor is positioned to sense movement of said at least one third magnet when said handle stalk is rotated in at least one of said first and second planes.

32. The multi-function stalk switch of claim 31, wherein said at least one third magnet comprises a proximal third magnet coupled to said handle stalk proximal of said first pivot pin and a distal third magnet coupled to said handle stalk distal to said first pivot pin; and

wherein said at least one second magnetic field sensor comprises at least one second magnetic field sensor for sensing rotation of said handle stalk about said first pivot pin, and at least one third magnetic field sensor for sensing rotation of said handle stalk about said second pivot pin.

33. The multi-function stalk switch of claim 32, wherein said at least one second and at least one third magnetic field sensors comprise Hall Effect sensors.

34. The multi-function stalk switch of claim 32, further comprising:

first and second plungers having respective first and second enlarged heads;

at least one fourth spring;

a first hole and a second hole formed in said rotation assembly;

wherein said proximal third magnet is positioned in said first plunger and said distal third magnet is positioned in said second plunger; and

wherein said first plunger is positioned within said first hole and said second plunger is positioned within said second hole; and

wherein one of said at least one fourth springs is positioned around each of said first and second plungers between each of said enlarged heads and said rotation assembly, thereby biasing said first plunger away from said rotation assembly.

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~~38.~~ A multi-function switch, comprising:

a first rotary switch module having a first surface;

a first magnet coupled to said first rotary switch module;

a second rotary switch module having a third surface;

a second magnet coupled to said second rotary switch module;

a rotary switch support member having a second surface and a fourth surface;

at least one first detent formed on one of said first and second surfaces;

at least one second detent formed on one of said third and fourth surfaces;

a first detent washer shaped to engage said at least one first detent, and having an angular position fixed relative to one of the first rotary switch module and the rotary switch support member;

a second detent washer shaped to engage said at least one second detent, and having an angular position fixed relative to one of the second rotary switch module and the rotary switch support member;

a first spring positioned to bias said first detent washer against said at least one first detent and a second spring positioned to bias said second detent washer against said at least one second detent;

a flexible circuit board in contact with and substantially conforming to at least a portion of said second surface, said flexible circuit board having a first plurality of first magnetic field sensors;

wherein said first magnet is positioned to be detected by at least one of said plurality of magnetic field sensors when said first rotary switch module is at a first position with respect to said rotary switch support member; and

wherein said second magnet is positioned to be detected by at least one of said plurality of magnetic field sensors when said first rotary switch module is at a second position with respect to said rotary switch support member;

a handle stalk having a proximal end and a distal end, said proximal end being operatively coupled to said rotary switch support member, and said distal end having a plunger coupled thereto such that said plunger may move linearly with respect to said stalk distal end, said plunger being biased in said distal direction;

a rotation assembly coupled to said handle stalk by means of a first pivot pin extending therethrough, such that said handle stalk can rotate in a first plane, and by a second pivot pin, such that said handle stalk can rotate in a second plane, said second plane being substantially perpendicular to said first plane;

a rotational receptacle coupled to said rotation assembly and having a first hole and a second hole;

a concave centering mechanism having a concave surface and coupled to said rotational receptacle such that said plunger is in contact with said concave surface;

wherein a pivoting force applied to the handle stalk causes said plunger to be displaced along said concave surface, thereby compressing said plunger away from said distal end;

wherein removal of said pivoting force allows distal linear movement of said plunger in response to said plunger bias, thereby forcing said plunger to a center of said concave surface;

first and second plungers having respective first and second enlarged heads and being positioned substantially within said first hole and said second hole, respectively;

a proximal third magnet substantially positioned within said first plunger and coupled to said handle stalk proximal of said first pivot pin;

a distal third magnet coupled to said handle stalk distal to said first pivot pin positioned substantially within said second plunger;

a fourth spring positioned around each of said first and second plungers between each of said enlarged heads and said rotation assembly, thereby biasing said first plunger away from said rotation assembly;

at least one second Hall effect sensor for sensing motion of said third magnets caused by rotation of said handle stalk about said first pivot pin;

at least one third Hall effect sensor for sensing rotation of said handle stalk about said second pivot pin.